

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 December 2003 (31.12.2003)

PCT

(10) International Publication Number
WO 2004/000966 A1

(51) International Patent Classification?: C09J 163/00, H01L 21/00, C09J 11/00 (74) Agents: HARTS, Dean M., et al.; Office of Intellectual Property Counsel, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).

(21) International Application Number:

PCT/US2003/019712

(22) International Filing Date: 23 June 2003 (23.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

2002-183277 24 June 2002 (24.06.2002) JP
2002-267115 12 September 2002 (12.09.2002) JP

(71) Applicant (for all designated States except US): 3M INNOVATIVE PROPERTIES COMPANY [US/US]; 3M Center, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): TAKEUCHI, Shoji [JP/JP]; 16-8-304, Yabe 4-chome, Sagamihara,, Kanagawa 229-0032 (JP). KAWATE, Kohichiro [JP/JP]; 8-13-12, Tamagawagakuen, Machida,, Tokyo 194-0041 (JP). SAKAKIBARA, Makoto [JP/JP]; 128-163, Kawamachi, Hachioji,, Tokyo 193-0321 (JP).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/000966 A1

(54) Title: HEAT CURABLE ADHESIVE COMPOSITION, ARTICLE, SEMICONDUCTOR APPARATUS AND METHOD

(57) Abstract: Provided are a heat curable adhesive composition and an adhesive article suited for dicing of a semiconductor and die-bonding of the diced semiconductor chip, and a semiconductor apparatus and a process for preparing a semiconductor apparatus using the adhesive composition and article. In one embodiment, the present invention provides a heat curable adhesive composition comprising a caprolactone-modified epoxy resin and a tack reducing component. Another embodiment of the present invention provides an adhesive article comprising a heat curable adhesive layer of a heat curable adhesive composition comprising a caprolactone-modified epoxy resin, a tack reducing component, and a backing layer carrying said adhesive layer on at least a portion of the backing layer.